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ABSTRACT

This document provides an overview of U.S. Army Research Institute (ARI) research, development, evaluation, and curriculum development activities in Army basic skills education from 1980 to 1988. It summarizes the results and products in educational program evaluation, curriculum development, incorporation of learning strategies in educational programs, application of technology to education, and dissemination of research findings. The research and development was aimed at evaluating the Army basic skills program, applying adult basic skills methodologies, disseminating education research findings, and exploring the value of the use of technology in Army education. The following findings were reported: (1) there is less attrition among soldiers who participate in Army basic skills training and they tend to reenlist more often that comparable soldiers who do not participate; (2) computer and videodisc technology can serve as effective delivery systems for education and training; (3) dissemination of research findings to individuals associated with Army education was found to be useful and timely; (4) under some conditions, significant improvements in learning resulted from training in learning strategies; and (5) curriculum development resulted in standardized Army-owned materials that are relevant to soldiers' military duties. (The document contains a 27-item bibliography.) (CML)

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Research Report 1486

ARI Research in Basic Skills Education: An Overview

Zita M. Simutis, Joseph S. Ward, Joan Harman, Beatrice J. Farr, and Richard P. Kern

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Technologies for Skill Acquisition and Retention
Training Research Laboratory

U. S. Army

Research Institute for the Behavioral and Social Sciences

July 1988

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The Army provides basic academic and English language instruction to enlisted soldiers to enhance their proficiency in military duties. Since 1980, ARI has conducted major research and development to (1) evaluate Army basic skills programs; (2) apply adult basic skills methodology to Army education, (3) disseminate education research findings, and (4) explore the value of technology in Army education. These efforts have had a major impact on Army education, and some products are being considered for application to nonmilitary vocational and education programs.

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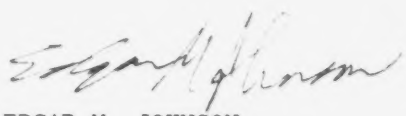
FOREWORD

The Technologies for Skill Acquisition and Retention Technical Area of the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) performs educational research and development. A major focus of this research is the development of information on which the Department of the Army can base decisions about its Basic Skills Education Program.

This report provides an overview of ARI research and development, evaluation, and curriculum development activities in Army basic skills education from 1980 to 1988 and summarizes the results and products developed in educational program evaluation, curriculum development, incorporation of learning strategies in educational programs, applications of technology to education, and dissemination of research findings. The results of these efforts have had a significant impact on decisions concerning Army basic skills education. Many of the products of these efforts are in place in the Army and some are being considered for application to civilian educational and vocational programs.

The research and development and curriculum development activities described in this report were supported by the Soldier Education Division, Total Army Personnel Agency, Office of the Deputy Chief of Staff for Personnel. The Education Director and his staff worked closely with ARI in the conduct of this project and were formally briefed several times each year on the progress of all aspects of the ARI program in basic skills education.



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A portion of the efforts described here was supported by Operations and Maintenance (O&MA) funds supplied by the Soldier Education Division, Total Army Personnel Agency, Office of the Deputy Chief of Staff for Personnel. These O&MA funds were used to conduct evaluations and to write curriculum materials.

The Soldier Education Division Director and his staff always provided the assistance and support required to conduct all aspects of the research, evaluation, and curriculum development. This support and assistance included answering almost daily phone calls from us requesting routine (and not so routine) information and points of contact, intercession on our behalf with Major Commands (MACOMS) and local installations, and moral support. During various phases of this work, Mrs. Louise Ellis and Mr. John Raines of the Soldier Education Division, in particular, provided significant support and prodding that helped to ensure that the work got done and that we stayed on course. Where we went off course, it was not their fault. We are grateful to the MACOM Education Directors and their staffs for their cooperation in all aspects of this work. We appreciate the involvement of all installation education center staff and soldiers who participated in the research, evaluation, and curriculum development. Indeed, their involvement made an important contribution to this research, because they, as end users, provided us with the feedback necessary to develop programs that would efficiently improve the soldiers' ability to perform their job.

ARI RESEARCH IN BASIC SKILLS EDUCATION: AN OVERVIEW

EXECUTIVE SUMMARY

Requirement:

The Department of the Army established the need for research and development to support the Army Continuing Education System (ACES) Programs, particularly Basic Skills Education Programs (BSEP), in the 1980 ACES Plan. This plan was developed to change the focus of Army basic skills instruction from academic-oriented programs to more job-related programs and to improve the evaluation of BSEP programs.

Procedure:

Between 1980 and 1988, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) conducted research and development to

1. evaluate Army basic skills programs,
2. apply adult basic skills methodologies to Army education,
3. disseminate education research findings, and
4. explore the value of the use of technology in Army education.

Findings:

1. Soldiers who participate in Army basic skills training tend to attrite less often and reenlist more often than comparable soldiers who do not participate.

2. Computer and videodisc technology can serve as effective delivery systems for education and training.

3. Dissemination of research findings to individuals associated with Army education was found to be useful and timely.

4. Under some conditions, significant improvements in learning resulted from training in learning strategies.

5. Curriculum development resulted in standardized, Army-owned materials that are relevant to soldiers' military duties.

Utilization of Findings:

The Soldier Education Division, Total Army Personnel Agency, Office of the Deputy Chief of Staff for Personnel, has used these findings to guide and plan the future of the Army's BSEP. The ARI job-relevant basic skills program developed by ARI was implemented at TRADOC, FORSCOM, WESTCOM, and AMC installations in 1985. ARI is handing off a computer-based basic skills program, the Job Skills Education Program, to the sponsor at the end of FY88.

ARI RESEARCH IN BASIC SKILLS EDUCATION: AN OVERVIEW

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ARI RESEARCH IN BASIC SKILLS EDUCATION: AN OVERVIEW

INTRODUCTION

The U.S. Army has a long history of providing remedial academic opportunities for its soldiers, beginning with the Revolutionary War when George Washington tasked his chaplain at Valley Forge to teach soldiers to read. Today's soldiers certainly are better educated than those of the Revolutionary War era, but the nature of the soldier's training and job is significantly more complex than it was in earlier times and places a heavier burden on reading, mathematical, and English language skills. Thus, the goal of remediating basic academic skill deficiencies, where necessary, is no longer viewed as simply providing a social good as it was during the Revolutionary War, but as a requirement for successful job training and effective job performance.

BACKGROUND

U.S. Army Basic Skills Programs

The Basic Skills Education Program, or BSEP, is currently the Army's major remedial academic skills program for enlisted soldiers E1-E5. The primary goal of BSEP is to provide enlisted soldiers with job-related basic academic competencies necessary to improve skills required for proficiency in military duties. In general, soldiers are eligible for participation if they score less than 100 on the General Technical (GT) composite of the Armed Services Vocational Aptitude Battery (ASVAB) and score at less than the 9th grade level on the Tests of Adult Basic Education (TABE). BSEP is offered at all Army installations, managed by Army civilians, and delivered at Army Education Centers by academically accredited civilian institutions. Even though the U.S. Army today recruits a large number of high school graduates (about 91% of accessions in FY87 held high school diplomas), BSEP continues to be a high volume program, with over 94,000 enrollees in FY87.

English-as-a-Second Language (ESL) Programs provide English language skills needed to perform military duties and to communicate with superiors, subordinates, and peers. The primary program is conducted at the Defense Language Institute English Language Center (DLIELC) for non-prior service accessions before initial entry training (IET). In FY87, 978 enlisted soldiers and 228 officers attended the DLIELC resident ESL program for up to six months each.

Army basic skills programs have changed substantially since BSEP was first established in 1977 and replaced the on-duty High School Completion Program. These changes came about because of (1) internal and external pressures to focus on those academic skills required for successful training and job performance, (2) the changing nature of the

population who volunteered for service in the Army and, (3) the development and application of research findings and products to issues in basic skills education. Some of these changes will be described below. Current policies, goals, and responsibilities of the BSEP and ESL programs, as well as other Army educational programs, are described in AR 621-5, Army Continuing Education System (ACES) whose proponent is the Soldier Education Division, Total Army Personnel Agency, Office of the Deputy Chief of Staff for Personnel.

U.S. Army Research in Basic Skills Education

In 1980, the U.S. Army Research Institute for the Behavioral and Social Sciences (ARI) began to plan a major research and development effort to (1) evaluate existing and emerging Army basic skills programs, (2) conduct research in adult basic skills education as it could be applied to the Army, (3) improve the dissemination of educational research findings, and(4) demonstrate and evaluate the potential of technology for use in Army education. Our research plan was part of a larger Army plan, the ACES plan, developed in response to taskings from the Chief of Staff of the Army and the Secretary of the Army to make major changes in Army education, including basic skills education. As we worked with our sponsor, the Education Division (ODCSPER), -- originally part of the Office of the Adjutant General -- additional taskings emerged, including the development of curricula. The remainder of this paper will highlight what we feel are some of the major accomplishments of our completed research and its impact on the military and civilian educational and research communities. The research will be discussed under the major headings of (1) evaluation, (2) technology demonstrations (including educational dissemination and learning strategies research), and (3) curriculum development.

EVALUATION

From 1981 to 1986, we and our contractor (American Institutes for Research) conducted extensive qualitative and quantitative evaluations of 14 BSEP and ESL programs and subprograms including established programs, revised programs, pilot programs, programs under development, and new programs. General goals of the evaluations included an assessment of the quality of the programs, their ability to meet stated educational objectives, and their impact on a soldier's academic skills and career growth. A quality control plan was also developed to assist the Army in tracking the results of its educational programs on a continuing basis (Harman, 1985; Hahn, Krug, Rosenbaum, Stoddart, & Harman, 1986).

General Approach

Two major sources of data were tapped to inquire into program status and impact:

1. Archival data taken from tapes obtained from the Training and Doctrine Command (TRADOC), the Enlisted Master File, and the Defense Manpower Data Center. Variables analyzed include reading grade levels, ASVAB scores, rates of attrition, pay grades, and Skill Qualification Test (SQT) scores.

2. Field visits to Army installations in the continental United States, Germany, and Panama. During these visits, in-place programs were observed, questionnaires were administered, and demographic and test data were collected on program participants. In addition, Education Service Officers, teachers, counselors, soldiers participating in the programs, and program graduates and their supervisors were interviewed.

Because not all soldiers who are eligible for academic skills programs are able to attend, we were able to compare performance of program graduates on several measures with that of eligible soldiers who did not attend. These two groups were matched on Armed Forces Qualification Test percentile, the ASVAB verbal subtest and ASVAB GT.

Results

Among other results, the evaluations consistently demonstrated that U.S. Army basic skills programs are valuable to the individual and to the Army. All BSEP and ESL programs evaluated improved soldiers' academic skills. Soldiers' supervisors reported that academic program graduates tended to be more highly motivated and demonstrated increased self-esteem after participating in the program. Longer term effects showed that academic skill programs such as BSEP and ESL change career patterns in ways that are advantageous to the Army. Program graduates had slightly higher pay grades and slightly higher SQT scores, on the average. Most significantly, all soldiers who needed and attended BSEP and ESL classes were more likely to reenlist and less likely to attrit than comparable soldiers who did not attend. This finding was true for each of the programs evaluated. The findings on attrition and reenlistment for two of the evaluated curricula are shown in Tables 1 and 2. Table 1 shows the results from the job-related BSEP curriculum currently being used at all installations in TRADOC, Forces Command (FORSCOM), Army Materiel Command (AMC), and Western Command (WESTCOM) (Hahn, Krug, and Stoddart, 1985). Table 2 shows the attrition and reenlistment results for a program similar to the current DLIELC 6 month resident ESL Program.

Table 1

Attrition and Reenlistment Data for Current BSEP Curriculum

	Number	%Attrition	%Reenlistment
BSEP Graduates	3271	3.4	37.9
Comparison Group	3328	34.6	11.0

Table 2

Attrition and Reenlistment Data for Former DLIELC 6 Month Resident ESL Program

	Number	%Attrition	%Reenlistment
ESL Graduates	186	22.7	27.6
Comparison Group	179	43.6	16.2

These and other results of the evaluation of basic skills programs have impacted on policy decisions, including decisions on factors to include in curricula under development, adoption of prototype curricula, completion criteria, and in the case of the current ESL program, a decision to separate from the Army those soldiers who fail to meet criterion levels by the end of the program. Perhaps the most significant effect of the evaluation work is that policy makers now have data on which to base their decisions concerning BSEP and ESL programs.

TECHNOLOGY DEMONSTRATIONS

Our technology demonstration research and development looked at ways to increase ACES effectiveness by applying new and emerging technologies to the Army. We looked at instructional technologies, such as videodisc and computer-based instruction, that could be used within existing and developing basic skills programs. We also looked at ways to use technology to improve the dissemination of educational information. In addition to computer-based technology, we also investigated a promising area of behavioral technology to improve soldiers' ability to learn and retain information -- learning strategies. In this section, we will present highlights of our research on using computer and behavioral technology to improve Army education programs.

Instructional Technology

One of the reasons we became heavily involved during the 80's in research to support the Army educational community was because of earlier research on using computer-based instruction (CBI) as an adjunct to standard Army classroom basic skills instruction (Simutis & Barsam, 1983). This research had shown that this new technology was well-liked by soldiers, could be integrated into Army classrooms, and had the potential for improving instructional quality. Our later instructional technology research sought to develop prototypical stand-alone delivery systems for Army education programs.

Hand-held tutor. One area we explored was the development of a low-cost, portable, computer-based teaching device which could be used to teach job-related vocabulary -- the hand-held computerized vocabulary tutor (Berkowitz & Simutis, 1983). At the time we began the program, the Army was moving towards job-related basic skills programs. One immediate way to meet the job-related goal was to incorporate the teaching of Military Occupational Specialty (MOS)-specific vocabulary in basic skills programs. At the same time, the computer industry was moving towards substantial increases in computer capabilities and reductions in costs for larger memory capacity. Our sponsors asked us to develop the technology for a highly portable, inexpensive (about $200 per system), computer-based delivery system for MOS-related technical vocabulary. The specifications for the hardware and courseware design were developed in-house and we worked closely with the contractor, Franklin Research Center, on the design specifications and their implementation as well as the evaluation of the tutor. Figure 1 shows a graphic depiction of the developed tutor.

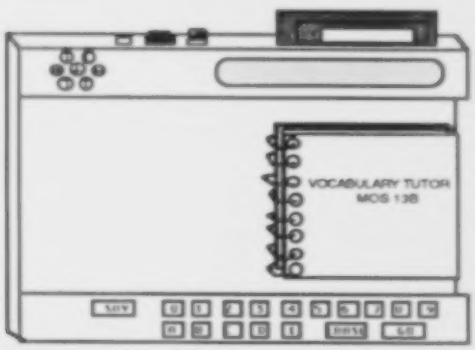

Figure 1. The Hand-held Computerized Vocabulary Tutor

The tutor weighs four pounds, can be operated by rechargeable batteries, and was designed for use in classroom as well as out-of-classroom environments (motorpools, barracks, etc.) In order to keep potential production costs under control, the tutor was designed to use a paper booklet to present information and test items and to take

advantage of what was known at the time to be the best of computer technology for CBI -- answer judging and drill-and-practice. Courseware features also include diagnostic pretesting, self-paced instruction, gaming, and speech capability. The tutor was designed so that courseware booklets and a plug-in module containing the computer chip for a specific vocabulary and specific course materials could be easily replaced with those for a different course of instruction. Software that drives the testing and drill-and-practice routines resides permanently in the body of the tutor.

The first curriculum developed on the tutor taught about 200 items of Cannon Crewman (MOS 13B) vocabulary. The 200 vocabulary items were derived from 13B vocabulary lists developed by TRADOC and subsequently reviewed for criticality by subject matter experts. The final vocabulary selection was made after 13B soldiers in a basic skills program at Fort Sill, Oklahoma, were tested on their knowledge of over 400 vocabulary items. Tests of the tutor showed that soldiers using the tutor in the classroom and in the field learned about twice as many new vocabulary items as did soldiers who used a paper only version of the instruction. To demonstrate the versatility of the tutor, two additional curricula (with corresponding booklets and plug in modules) were developed: to teach mathematics to Combat Engineers (MOS 12B) and to provide M1 Tank Commanders with instruction in fire commands and degraded mode gunnery (Bridgeman & Fertner, 1986). Tutors with the 13B vocabulary and the 12B mathematics curricula are currently being used by the Education Center at Fort Sill, Oklahoma. Further development of the tutor concept was conducted by ARI's Engineering Development Office upon completion of our research.

Videodisc-based training. ARI was a pioneer in the integration of videodisc and computer technology into interactive videodisc (IVD) training systems. One of the major projects was the application of IVD to basic skills training (Ramsberger, Sticha, Knerr, Elder, Rosenblatt, Parris, Wagner, & Leopold, 1986). As is the case with all computer-based training technology, what teaches is not hardware, but the courseware. So our research emphasis was largely directed at design, development, and "how to use" the videodisc technology to teach, rather than at hardware refinements. We, together with our contractor, Human Resources Research Organization, were particularly interested in design aspects of developing IVD, in developing non-traditional curriculum materials to support BSEP, and in ways to present information using IVD to less skilled readers. During the course of the project 12 videodiscs were produced on such topics as study skills, test-taking skills, and map reading skills. Although the research was plagued with hardware problems throughout a large part of the effort, we were able to develop an effective student interface which did not require typing, advance th state of the art of IVD design, and demonstrate that, under some conditions, IVD can be an effective education and training delivery system.

Dissemination of Educational Information

The ARI research and development in disseminating educational information was designed (1) to improve the Army educational community's access to information about research in adult education, especially as it could be applied to BSEP and, (2) to improve the ability of Army education counselors to individualize soldier career counseling by providing up-to-date information about Army-wide and installation-specific educational programs. In order to address these goals we developed an educational information resource network and a computer-based career counseling system.

Military Educators Resource Network. In 1982 we began the design of a program to assist the Army in disseminating up-to-date, basic skills research to individuals associated with Army education. After an intensive needs assessment, we developed the Military Educators Resource Network, or NETWORK with our contractors, InterAmerica Associates (Russo & Foster, 1985). NETWORK was originally designed to provide Army practitioners, administrators, and researchers with basic skills information that would be responsive to their needs. As the project developed, the other military services requested that they also be allowed to participate.

NETWORK provided a variety of services to its users and developed a database which included not only standard literature, but also "fugitive literature," such as unpublished technical and conference reports, statistical data, and Army education historical materials. NETWORK services included an *inquiry response service* which was designed to assist users to obtain current basic skills education information in the form most useful to them. The *referral service* provided a user with the name of an individual or an organization that would be most likely to respond to the user's request. NETWORK also provided a *current awareness service* and a *publication development service* which regularly disseminated information to users about new resources or advances in adult basic skills education.

NETWORK operated from March 1983 through July 1984. During that time we were able to collect sufficient evaluation data to be able to make recommendations for operational use. In general, users found the NETWORK services to be useful and timely. All users, when asked, said that they would use NETWORK services again. At the completion of the project, the database, reference materials, and recommendations were transferred to the Department of Defense (DOD)-wide activity responsible for educational information dissemination, the Defense Activity for Non-Traditional Education Support (Russo, Foster, & Modjeski, 1985). ARI continues to respond to a variety of information requests from the Army and other DOD educators concerning basic skills research findings and their application.

Army Education Information System (AREIS). We were asked by our sponsors to develop and evaluate a computer-based Army career and educational guidance system in order to reduce the routine information dispensing tasks of Army Education Center Counselors and to aid soldiers

in making decisions about their careers. We, with our contractor, DISCOVER Foundation, developed AREIS to meet these needs (Rabush, Berkowitz, & Modjeski, 1985). AREIS provided computer-based courseware, software and tests to enable soldiers to assess their individual career interests, values, and aptitudes. AREIS provided online administration and interpretation of three self-assessment instruments used in civilian career guidance to help the soldier broaden or narrow his or her career choices. Using the assessment profile, system software generated a list of appropriate career choices by matching the soldier's responses to a database of over 400 civilian jobs and their corresponding MOS. It also provided information on local educational and training course offerings. The system was evaluated for a nine month period at three Army sites. In spite of significant hardware problems during the evaluation, soldiers felt that AREIS was highly useful to them. We also gained valuable information on how to design an operational system.

Learning Strategies

We invested a considerable amount of in-house time as well as some contract dollars to look at ways to facilitate soldiers' learning and retention of information through the use of learning strategies. Unlike instructional strategies in which an authority, such as an instructor, manipulates the learning situation in some fashion, learning strategies are skills that allow the learner to manipulate the learning situation. Examples of learning strategies include study, test-taking, and self-motivational skills. They also include more complex skills such as self-monitoring of knowledge states. Our research ranged from model development to the evaluation of learning strategy training programs. This section will briefly review a small portion of this research.

Our literature reviews (Mutter, 1986); O'Malley, Russo, Chamot, Walker, Brooks, & Sabol, 1987a) showed that teaching learning strategies to individuals often helps them to learn textual and other types of material. Sometimes it does not. In order to make some sense of the literature and to better plan our research, we developed a framework within which to consider our own and others' research results (Brooks, Simutis, & O'Neil, 1985). This framework emphasized the need to consider individual differences as a major factor when conducting research and analyzing its results or when developing training programs.

In general, less skilled readers - such as the BSEP population - are less likely to develop learning strategies spontaneously than are more highly skilled readers. Much of our learning strategy research focused on ways to teach reading-related learning strategies (Brooks, Bitler, & Shurtleff, 1984; Baker, 1987). Our research and that of our contractors developed experimental systems for improving reading comprehension skills (Wittrock & Kelly, 1985; Brooks & Dansereau, 1983). We also looked at the development of learning strategy training for improving listening comprehension in ESL learning (O'Malley, Russo,Chamot, Walker, Brooks, & Sabol, 1987b) and motivational skills training (McCombs, Lockhart, Bruce, & Smith, 1985). We modified and evaluated a program used in the civilian community for use in BSEP

(Russ-Eft, McLaughlin, Oxford-Carpenter, Harman, Simutis, & Baker, 1984). Because we knew that the Army was heading in the direction of computer-based training, we also looked at the delivery of learning strategy training via the computer (Dansereau, Rocklin, O'Donnell, Hythecker, Larson, Lambiotte, Young, & Flowers, 1985).

The results of this research were incorporated in our final curriculum development activities which are described below. Results of this research are also currently being used in the development of tactical operations training for the Armor Officer Basic Course. Because of the significant improvements in learning that can be found with training learning strategies, we have expanded this task to look at the application of learning strategies to Army technical training.

CURRICULUM DEVELOPMENT

When we began our research, the content of basic skills programs was basic mathematics, reading, and grammar. Curricula at most installations were not job-related. Formally, there were two programs: BSEP I in the training base for soldiers with lower than fifth grade reading ability, and BSEP II with eligibility requirements similar to those described above as BSEP. In practice, there were many different versions of BSEP in the field because each installation delivered basic skills content in a format that was entirely dependent on who was awarded the local BSEP contract. Our research and technical assistance helped the Army move from a largely academically-oriented basic skills program to one that is more job-oriented. One transition effort resulted in a DA pamphlet for BSEP developers. A second effort developed, evaluated and implemented a job-related, paper-based curriculum. We are currently completing the development and evaluation of a computer-based curriculum which is based on a TRADOC analysis of underlying competencies required to perform in over 90 MOS.

Guidance for BSEP Developers

In 1980 we began to collect information about state of the art approaches for teaching basic skills to adults (DeWeaver & Prather. 1980). As part of that effort we asked each Army installation to forward copies of any job-related, basic skills curriculum materials they might be using. The materials received were analyzed for their suitability for use with adults and their military job relevancy. We found that several sites had developed materials that were job-related and suitable for use with adults. We were asked by our sponsors to prepare guidance to the field on how to use these existing materials and procedures in order to facilitate the transition to a more job-oriented BSEP. Our work developed the publication of DA Pamphlet 621-11 (Education Handbook for MACOM and Local Basic Skills Education Program (BSEP II) Curriculum Development) which was used for several years by Education Centers and their BSEP contractors so that they could more immediately meet the goal of a job-related BSEP.

Job-Related BSEP II Curriculum

In 1980, ARI's Presidio of Monterey Field Unit and their contractor, McFann, Gray & Associates, completed research which identified distractors to effective combat training (Funk, Johnson, Batzer, Campbell, Vandecaveye, & Hiller, 1980). BSEP was identified as one of the major distractors. Some commanders reported the perception that BSEP participation had no effect on job performance. Partly because of these results, the field unit contracted with McFann, Gray & Associates to develop and test prototype lessons using job-related curriculum material for BSEP II and a management system which would reduce BSEP's impact as a training distractor (Avant, McGuire, & Howard, 1983). The results of this research showed that the materials developed not only taught academic skills but also had considerable face validity as being job-related because they incorporated a significant amount of information from the Soldiers Manual of Common Tasks while teaching mathematics, language and reading. The program was open-entry/open-exit and highly individualized to allow scheduling flexibility for integrating BSEP training with unit training. We brought the results of this research to the attention of our sponsor and they asked us to complete the development of the prototype curriculum and to conduct a formal evaluation of its effectiveness. The primary reason we were asked to complete the curriculum was because the Army was under considerable pressure to develop an Army-owned, standardized curriculum. Upon completion, it was adopted by FORSCOM in 1984 as its standard BSEP program. FORSCOM revised it as a result of installation experiences and recommendations which came from the formal evaluation (Hahn, Krug, & Stoddart, 1986). Shortly after, it became (and still is) the standardized BSEP curriculum in use at all FORSCOM, TRADOC, WESTCOM, and AMC installations.

Job Skills Education Program (JSEP)

JSEP is a computer-based curriculum under development by ARI and its contractor, Florida State University. The JSEP concept is the culmination of the grand plan to standardize a highly job-related basic skills program in the Army. Many aspects of our earlier research products and findings were incorporated in JSEP. JSEP is designed to provide remediation for soldiers at skill levels 1 and 2 with demonstrated deficiencies in the knowledge and skills needed to learn and to perform in their MOS (Farr, Bell, Sabol, & Wilson, 1986). The curriculum is based on a TRADOC analysis of the underlying requirements, called prerequisite competencies, for performance of tasks in over 90 MOS and in Common Tasks. Even though it has math and verbal components, JSEP is not a traditional basic skills program. In addition to math and verbal lessons, courseware was developed also for prerequisite competencies which are not taught in typical basic skills classes, such as identifying symbols on a flow chart, using hand and arm signals, and minimizing safety and security risks. Most of this courseware is computer-based and is presented in an Army context. In addition, JSEP provides some training in learning strategies, such as test-taking

skills, to support learning JSEP lessons. A computer-based management system was developed so that soldiers receive courseware that is appropriate for their MOS. The management system also keeps records of soldier progress.

During its development, portions of JSEP were tried out at several Army sites. In FY88 JSEP components are being field tested at Forts Sill, Leonard Wood, Lewis, Riley, Jackson, Bliss, and at Walter Reed Army Medical Center. Now that the JSEP courseware and management system are nearly completed (we expect revisions to be completed late in calendar year 88), we have contracted with the American Institutes for Research for an independent, third party evaluation, with results expected in early summer. Early indications show that the system functions as it was designed to and that JSEP is well accepted by soldiers. The sponsor expects to begin implementing JSEP world-wide in FY89 on the Army developed computer-based training system - the electronic information delivery system (EIDS), and on existing Army PLATO systems.

Several civilian groups have expressed interest in JSEP even though it is not quite complete. JSEP courseware has been transferred to a number of groups under the Federal Technology Transfer Act of 1986. General Motors Corporation is reviewing the courseware for use in job retraining programs for its employees. The State of North Carolina is considering using the courseware in its vocational educational high schools. The Departments of Labor and Education awarded contracts in 1988 to look at the implementation of JSEP in the civilian sector.

THE FUTURE

With the Army's plan to implement JSEP, our BSEP efforts are nearing completion. We have begun applying much of what we have learned in the BSEP research for enlisted soldiers to the the conduct of research on how to remediate the special academic skill needs of the Non-Commissioned Officer (NCO). The goal of the first phase of this research is to identify the academic skills requirements for soldiers entering NCO academies. Depending upon these and other findings, we will develop and execute a research plan to improve the efficiency and effectiveness of NCO educational programs, such as the Career Soldier Education Program.

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